## Appendix A

| Cathode (Reduction) Half-Reaction | Standard Potential, $E°$ (V) |
|---|---|
| $Li^+(aq) + e^- \rightleftharpoons Li(s)$ | −3.04 |
| $Na^+(aq) + e^- \rightleftharpoons Na(s)$ | −2.71 |
| $Mg^{2+}(aq) + 2e^- \rightleftharpoons Mg(s)$ | −2.38 |
| $Al^{3+}(aq) + 3e^- \rightleftharpoons Al(s)$ | −1.66 |
| $2H_2O(l) + 2e^- \rightleftharpoons H_2(g) + 2OH^-(aq)$ | −0.83 |
| $Zn^{2+}(aq) + 2e^- \rightleftharpoons Zn(s)$ | −0.76 |
| $Cr^{3+}(aq) + 3e^- \rightleftharpoons Cr(s)$ | −0.74 |
| $Fe^{2+}(aq) + 2e^- \rightleftharpoons Fe(s)$ | −0.41 |
| $Cd^{2+}(aq) + 2e^- \rightleftharpoons Cd(s)$ | −0.40 |
| $Ni^{2+}(aq) + 2e^- \rightleftharpoons Ni(s)$ | −0.23 |
| $Sn^{2+}(aq) + 2e^- \rightleftharpoons Sn(s)$ | −0.14 |
| $Pb^{2+}(aq) + 2e^- \rightleftharpoons Pb(s)$ | −0.13 |
| $Fe^{3+}(aq) + 3e^- \rightleftharpoons Fe(s)$ | −0.04 |
| $2H^+(aq) + 2e^- \rightleftharpoons H_2(g)$ | 0.00 |
| $Sn^{4+}(aq) + 2e^- \rightleftharpoons Sn^{2+}(aq)$ | 0.15 |
| $Cu^{2+}(aq) + e^- \rightleftharpoons Cu^+(aq)$ | 0.16 |
| $Cu^{2+}(aq) + 2e^- \rightleftharpoons Cu(s)$ | 0.34 |
| $IO^-(aq) + H_2O(l) + 2e^- \rightleftharpoons I^-(aq) + 2OH^-(aq)$ | 0.49 |
| $Cu^+(aq) + e^- \rightleftharpoons Cu(s)$ | 0.52 |
| $I_2(s) + 2e^- \rightleftharpoons 2I^-(aq)$ | 0.54 |
| $Fe^{3+}(aq) + e^- \rightleftharpoons Fe^{2+}(aq)$ | 0.77 |
| $Hg_2^{2+}(aq) + 2e^- \rightleftharpoons 2Hg(l)$ | 0.80 |
| $Ag^+(aq) + e^- \rightleftharpoons Ag(s)$ | 0.80 |
| $Hg^{2+}(aq) + 2e^- \rightleftharpoons Hg(l)$ | 0.85 |
| $ClO^-(aq) + H_2O(l) + 2e^- \rightleftharpoons Cl^-(aq) + 2OH^-(aq)$ | 0.90 |
| $2Hg^{2+}(aq) + 2e^- \rightleftharpoons Hg_2^{2+}(aq)$ | 0.90 |
| $NO_3^-(aq) + 4H^+(aq) + 3e^- \rightleftharpoons NO(g) + 2H_2O(l)$ | 0.96 |
| $Br_2(l) + 2e^- \rightleftharpoons 2Br^-(aq)$ | 1.07 |
| $O_2(g) + 4H^+(aq) + 4e^- \rightleftharpoons 2H_2O(l)$ | 1.23 |
| $Cr_2O_7^{2-}(aq) + 14H^+(aq) + 6e^- \rightleftharpoons 2Cr^{3+}(aq) + 7H_2O(l)$ | 1.33 |
| $Cl_2(g) + 2e^- \rightleftharpoons 2Cl^-(aq)$ | 1.36 |
| $MnO_4^-(aq) + 8H^+(aq) + 5e^- \rightleftharpoons Mn^{2+}(aq) + 4H_2O(l)$ | 1.49 |
| $H_2O_2(aq) + 2H^+(aq) + 2e^- \rightleftharpoons 2H_2O(l)$ | 1.78 |
| $S_2O_8^{2-}(aq) + 2e^- \rightleftharpoons 2SO_4^{2-}(aq)$ | 2.01 |
| $F_2(g) + 2e^- \rightleftharpoons 2F^-(aq)$ | 2.87 |

strongest reducing agent

strongest oxidizing agent